Original Article

Awareness and Willingness to Pay for Community Based Health Insurance in Ikorodu Local Government Area.

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ABSTRACT

Community Based Health Insurance schemes (CBHIS) help to provide financial risk protection and improve the quality of health care. An effective and reliable willingness to pay information for a target population would facilitate scheme design and implementation. The study aimed to assess the awareness and willingness to pay as well as factors influencing the willingness to pay for the CBHIS among households in Ikorodu, a semi-urban community in Lagos state, Nigeria. It was a descriptive cross-sectional study carried out among 422 household heads in Ikorodu Local Government Area using multistage sampling method. Information was obtained with a structured interviewer administered questionnaire. Data analysis was by using Epi-info version 7.0 and results presented as frequency tables and cross-tabulations. The mean age of the 422 respondents was 40.6 + 10.4 years. Most were males (61.6%), married (83.4%) and 0.7% without formal education. While awareness about CBHI was low among the respondents with only 10.7% being aware of the existence of CBHI, 96.5% believed such a scheme would be beneficial. Majority (98.8%) of the respondents were willing to enroll and pay into the proposed expanded CBHI scheme. Those willing to pay the opening premium of N400 were 88.2%. The mean amount respondents were willing to pay was N538.8 + 227.0 and the allowable range for fixing premium was between N100 and N2000. A bi-variate analysis showed that the factors affecting willingness to pay were educational level, occupation, income and past health expenditure of household heads. The study showed some differentials in the level of premium payment acceptable to different socio-economic groups and it may be necessary to factor this into the design of CBHI scheme for example by providing different packages commensurate with level of premium paid. Though this study showed low level of awareness of CBHI among respondents, it also showed a very high level of willingness to participate in CBHI once the respondents had adequate information.

Keywords: Awareness, Community based health Insurance, Premium, Willingness to pay

INTRODUCTION

Community Based Health Insurance (CBHI) has been an option of financing health care which gives opportunity to community members to have access to quality health care at a price that is affordable.[1] Community Based Health Insurance is a promising avenue to provide universal financial protection for the informal sector and the rural populace. It can be a non-profit making programme for a cohesive group of households/individuals or occupation-based group, formed on the basis of the

ethics of mutual aid and the collective pooling of health risks, in which members take part in its management.[1,2,3] Everyone should have access to needed health care services that are effective and of acceptable quality, and no one should risk financial ruins as a result of this.[2] Community Based Health Insurance scheme provides some financial risk protection by reducing direct out of pocket spending, creates equity and equality in health care provision as well as possible improvement in quality of services.[4] CBHI schemes are noted for the principal role of a community's involvement in raising, pooling, allocating, purchasing and supervision of the health financing arrangement. Some of these schemes cover similar geographical entities, professional affiliations and some other joint activities. Their beneficiaries are individuals with no form of financial protection or ability to cover the cost of healthcare services; and most of the existing schemes are voluntary in nature. [5,6] Majority of Nigerians cannot afford and access health care services because it is beyond their financial reach. Statistics put 70.2% of Nigerians as living below the poverty line of USD 1.00 per day which emboldens the vicious cycle of poverty, ignorance and disease.[7] Nigeria's expenditure on health is still low despite the Commission on Macroeconomics and Health's estimate that basic services could be made available for about US$ 34 per person[2] and Abuja declaration on health by African countries which set a target of allocating at least 15% of their annual budgets to improve the health sector.[8] Community-Based Health Insurance can form an important source of health security especially for households. Determining the demand for health care by households using a willingness to pay technique in the form of community-based health insurance can provide important clues to help policymakers and micro insurance practitioners in improving access to quality health care.[9] Community-Based Health Insurance provides financial protection from the cost of seeking health care. It has three main features: prepayment for health services by community members; community control; and voluntary membership.[10] The CBHI scheme has emerged as an alternative to user fees and are designed to ensure

that sufficient resources are made available for members to access effective health care[11]

In Nigeria enrolment into some Community Health Based Insurance schemes have been low with small average premiums because of a lack of study on willingness to pay before such schemes took off. An effective and reliable willingness to pay information for a target population would facilitate scheme design and implementation. Some studies have revealed that households do not readily accept the idea of paying for services they might not use with regard to health care, some other studies reveal the opposite.[12,13,14] CBHI pockets of schemes are scattered over the country and cover only a small number of households, though the National Health Insurance Council (NHIC) plans to promote and scale-up CBHI schemes [15,16]

This study was to assess the awareness and willingness to pay for health Insurance in one of the semi-urban communities in Lagos to aid the design of the scheme and to set the allowable premium which may prevent the collapse of the Health Insurance scheme when it eventually takes off.

MATERIALS AND METHODS

Study site: The study was conducted in Ikorodu Local Government Area of Lagos state. The population in the whole of Ikorodu Local Government Area was 748,000. There are seven political wards under the control of the Ikorodu Local Government Area. The study population is a mixture of both rural and urban dwellers and is mainly constituted of artisans and traders.

Study Design, sample estimation: It was a descriptive cross-sectional study carried out among household heads in Ikorodu Local Government Area. The minimum sample size of 384 was estimated using the Cochran formula, imputing a P of 0.05 for maximum variability, a precision of 0.05, z score of 1.96. The sample was further increased to 422 in order give room for 10% attrition rate.

Sampling method: A multistage sampling technique was used to select respondents. Four wards were randomly selected from the seven political wards in the LGA. The total population and list of wards alongside the streets of Ikorodu Local

Government Area was obtained from both the National Population Commission and the Primary health care centre at Ita-Elewa in Ikorodu LGA. Proportional allocation of the sample sizes was done to the selected wards based on the population of each household present in the wards. Streets used were selected by simple random sampling from each selected ward. Selection of the houses used was gotten by splitting the sample size for each ward by the total number of selected streets per ward. Households were selected randomly from each of the selected houses on the streets selected per each ward. Where there was more than one household living in a building, one of them was then selected by simple random sampling for questionnaire administration.

Data collection and techniques: Data was collected with the aid of a pre-tested structured, interviewer administered questionnaire which was adapted by the authors from relevant literature.[17] The questionnaire elicited information on socio-demographic characteristics of respondents and their households. (i.e. respondents' status in the household, number of household members, number of adults, age, gender, occupation, educational level, average monthly income etc.) and their awareness of CBHI. Willingness to pay for CBHI was elicited after proposing a hypothetical CBHI scheme to respondents and explaining its attributes. The questionnaire was written in English language and contents were interpreted in Yoruba language to the respondents. Data was collected by authors and seven university graduates research assistants who were adequately trained in the use of the data collection tool to elicit willingness to pay using the bidding game format. The data was collected over a period of two months- May to June, 2016.

Ethical approval was obtained from the health-research ethics Committee (HREC) of the Lagos University Teaching Hospital. Permission was obtained from the Medical Officer of Health and Executive Secretary of the Ikorodu Local Government Area. Written informed consent was obtained from all the respondents.

Data analysis: Data analysis was done using Epi-info version 7.0. and with frequency tables, bivariate analysis was done to assess the relationship between variables and mean maximum amount respondents were willing to pay. The respondents were categorized into those who can pay less than the mean maximum amount and those who can pay equal to or greater than the mean maximum amount. Statistical significance of factors identified in the bivariate model was ascertained using Chi-square and Fisher's exact with α-values less than 0.05 being considered as statistically significant. Confidence interval was set at 95% for all statistical tests.

RESULTS

A total of 442 respondents participated in the study; however, only 422 were properly filled and subsequently analyzed.

Socio-demographic information

The modal age group of the respondents was 21-40 years old with percentage of 53.8% (227). The mean age was 40.6 $\pm$ 10.4. Males constituted a higher value of 61.6% (262) while females were 38.4% (160). With respect to marital status, the married respondents constituted a greater percentage of 83.4% (352), singles were 8.1% (34), while the separated and widowed were 5.3% (22) and 3.3% (14) respectively. The educational status of the respondents showed that 0.7% (3) had no formal education, 46% (194) had secondary school education, 43.8% (185) had tertiary education and those with primary education were 9.6% (40). Out of the 422 respondents, 60.7% (256) had Christianity as their religion; Islam was 38.6% (163) while 0.7% (3) practiced other religions. Respondents in salary employment were 33.5% (141), artisans 28.7% (121), traders 35.8% (151) and students 1.7% (7). Full-time house wives were just 0.3% (2). Majority of the respondents, 82.9% (350), were of the Yoruba ethnic group, while Ibos were 11.6% (49), Hausas were 1.4% (6) and the other ethnic groups constituted 4.1%. (17) The modal household size of the respondents was 3-5 with a percentage of 68.7% (290), while respondents with a household size of 6-8 constituted 19% (80). The average monthly income of 40.7% (172) of the respondents was less than 20,000 Naira, 31.8% (134) of the respondents earned between 20,000-39,000 Naira while 16.1% (68) and 11.4 % (48) earned between 40,000-59,000

Naira and greater than 60,000 Naira respectively.

Awareness of Community Based Health Insurance

A significant proportion of the respondents (89.3%,377) had not heard about Community Based Health Insurance. Almost one-third (31%,13) of the few who were aware of CBHI got the information through the mass media such as radio and television. Others reported they heard about the scheme from relatives, awareness campaigns and community members. A great majority (92.4%,390) of the respondents did not know if any CBHI scheme exists in Lagos state. Although two thirds (67.5%,285) and a great preponderance (96.5%,407) of the respondents were aware the CBHI would be for the informal sector and also would be a beneficial one if started.

Willingness to pay for Community Based Health Insurance

Majority 417(98.8%) were willing to enroll for a proposed Community-Based Health Insurance scheme while 388 (91.9%) were willing to enroll their household members. The reasons given for not willing to enroll were: inability to afford the premium, distrust in the scheme, and wariness about the quality of health care provided by such schemes.

Four hundred and seventeen (98.8%) of the respondents were willing to pay for a proposed CBHI scheme with 372 (88.2%) of them willing to pay the opening bid of N400.00 premium. The mean amount respondents were willing to pay was N538.8 ± 227. Three hundred and one (71.5%) were willing to pay same amount for household members. Those who were not willing to pay gave reasons of inability to afford the premium.

Factors associated with willingness to pay for Community Based Health Insurance

A bivariate analysis showed that few of the socio-demographic factors were significantly associated with willingness to pay. The association between educational status and the amount respondents were willing to pay was statistically significant p = 0.007; a statistically significant association was also found between the type of occupation of the respondents

and amount willing to pay p = 0.02, There was also a statistically significant association with average monthly income (p =0.0001), past health expenditure of household head (p-value = 0.0000) and the amount respondents were willing to pay.

Table 1. Socio-demographic characteristics of the respondents

Socio-demographic Variable (N=422)	Frequency (%)
Age(years)	
< 20	3(0.7)
21-40	227(53.8)
41-60	178(42.2)
>60	*14(3.3)*
Sex	
Male	262(61.6)
Female	160(38.4)
Marital status	
Single	34(8.1)
Married	352(83.4)
Separated	22(5.3)
Widowed	14(3.3)
Educational status	
No-formal education	3(0.7)
Primary	40(9.5)
Secondary	194(46.0)
Tertiary	185(43.8)
Religion	
Christianity	256(60.7)
Islam	163(38.6)
Others	3(0.7)
Occupation	
Traders	151(35.8)
Salary employment	141(33.5)
Artisans	121(28.7)
Full housewife	2(0.3)
Student	7(1.7)
Ethnic group	
Yoruba	350(82.9)
Ibo	49(11.6)
Hausa	6(1.4)
Others	17
Household size	
1-2	42(10.0)
3-5	290(68.7)
6-8	80(19.0)
>9	10(2.3)
Average monthly income (N)	
< 20,000	172(40.7)
20,000 -39,000	134(31.8)
40,000-59,000	68(16.1)
> 60,000	48(11.4)

Table 2. Respondents' awareness of community-based health insurance (CBHI)

Awareness of CBHI	Frequency (%)
Heard of CBHI	
Yes	45(10.7)
No	377(89.3)
Source of information	
Community members	5(11.9)
Relatives	110(23.8)
Radio /TV	13(31.0)
Leaflets /brochures/ posters	1(2.4)
Awareness campaign	6(14.9)
Others	7(16.7)
Awareness of CBHI in Lagos State	
Yes	32(7.6)
No	390(92.4)
Awareness that CBHI is for informal sector	
Yes	285(67.5)
No	137(32.5)
Believe CBHI is beneficial	
Yes	407(96.5)
No	15(3.5)

Table 3. Respondents' Willingness to pay for CBHI (n=422)

Willingness to pay for CBHI	Frequency (%) (%(%))
Willing to pay for CBHI	*417(98.8)*
Not willing to pay for CBHI	*5(1.2)*
Willing to pay opening bid(400 premium)	*372(88.2)*
Amount willing to pay	**n= 422**
100 -200	9(2.1)
201 -300	27(6.4)
301 - 400	55(13.0)
401 - 500	227(53.8)
501 -10000	99(23.5)
>1000	5(1.2)
WTP max per household member	**n=422**
Willing to pay	302(71.6)
Not willing to pay	120(28.4)
Mean amount willing to pay	N 538.8 ± 227.0
Minimum amount willing to pay	N 100
Maximum amount willing to pay	N 2000
Median amount willing to pay	N 500

Table 4. A bivariate analysis showing the relationship between some socio-demographic factors, past health expenditure and amount respondents are willing to pay for CBHI.

Variable	Less than 500 Freq (%) n= 137	Greater than or equal to 500 Freq(%) n=285	P value
Age			
<=20	2(1.5%)	3(1.1)	0.280≠
21-40	73(53.3)	155(54.4)	
41-60	58(42.3)	117(41.0)	
>60	4(2.9)	10(3.5)	
Male	61(44.5)	101(35.4)	0.087≠
Female	76(55.5)	184(64.6)	
Marital status			
Single	17(12.4)	17(5.9)	0.05≠
Married	111(81.0)	241(84.6)	
Separated	3(2.2)	18(6.4)	
Widowed	6(4.4)	9(3.1)	
Educational status			
No formal education	1(0.7)	2(0.7)	0.007≠*
Primary	21(15.3)	19(6.7)	
Secondary	67(48.9)	127(44.6)	
Tertiary	48(35.1)	137(48.0)	
Occupation			
Trader	56(40.9)	95(33.4)	0.02≠*
Salary employment	32(23.4)	109(38.3)	
Artisan	46(33.6)	75(26.3)	
Full housewife	0(0.0)	2(0.7)	
Student	3(2.2)	4(1.4)	
Household size			
1-2	19(13.9)	23(8.1)	0.056 ≠
3-5	84(61.3)	206(72.3)	
6-8	32(23.3)	48(16.8)	
>9	2(1.5)	8(2.8)	
Average monthly income			
<20,000	64(46.7)	108(37.9)	0.0001≠*
20,000- 39,000	55(40.2)	79(27.7)	
40,000-50,000	8(5.8)	60(21.1)	
>60,000	10(7.3)	38(13.3)	
Past health expenditure for household head			
1-100	4(2.9)	0(0.0)	0.00≠*
101-500	133(97.1)	181(63.5)	
501-1000	0(0.0)	99(34.7)	
>1000	0(0.0)	5(1.8)	

≠= Fishers exact * = Statistically significant

Table 5. Logistic regression analysis of variables and Willingness to pay for CBHI.

Predictor variables	Odds ratio[95%CI]	Coefficient	Standard error	p value
Occupation				
Artisan *				
Merchant	1.4(0.59-3.29)	0.34	0.44	0.44
Petty trader	0.7(0.41-1.39)	-0.29	0.30	0.33
Salary employment	1.4(0.72-2.78)	0.35	0.92	0.32
Educational level				
No formal	1.0(0.79-12.80)	0.003	1.29	0.99
Primary	0.4(0.18-1.03)	-0.86	0.45	0.59
Secondary	0.9(0.55-1.69)	-0.36	0.29	0.89
Tertiary*				
Average-monthly income				
20,000-39,000*				
<20,000	1.2(0.74-1.87)	0.16	0.27	0.49
40,000-59,000	5.2(2.31-11.78)	1.65	0.42	0.00
>60,000	2.6(1.22-5.75)	2.97	0.39	0.01
Past-health Expenditure				
Household head				
1-100	0.5(0.19-1.09)	-0.79	0.45	0.08
101-500	0.5(0.27-0.90)	-0.71	0.31	0.02
501-1000	0.7(0.34-1.42)	-0.37	0.37	0.32
>1000*				

*Reference Category

DISCUSSION

The study showed that a great preponderance of the respondents (89.3%) had not heard about CBHI with only 10.7% of the respondents aware of the scheme. This contrasted with a study done in North central zone of Nigeria where 71% had good knowledge of CBHI.[57] The percentage of respondents that knew about CBHI from the study is particularly lower than what was reported in a study done in Ilorin, Nigeria which was 37.8%.[12] The poor awareness of CBHI in terms of its accessibility and the services which its offers may be due to lack of sensitization and public enlightenment programmes about it. However, majority of the respondents were aware that such a scheme is a beneficial scheme which is similar to a study in India where the respondents agreed that the community health insurance scheme is beneficial.

The study showed that among the respondents, 91.9% were willing to enroll into community-based health insurance scheme which corroborates a survey done in Nigeria by the centre for health economics and development which found that up to 97.3% of the twenty million households were willing to enroll into voluntary health insurance scheme.[18] A great preponderance of the respondents (98.8%) in the study were willing to pay into a CBHI scheme which is similar to a study carried out in North central of Nigeria where 94% of respondents were willing to pay into a community-based health insurance scheme if it is made available.[19] Other studies in New Delhi, India also showed the willingness of participants to pay into the CBHI scheme.[20] A study done in the Eastern Caribbean state of St Vincent's and Grenadines also corroborate the fact that people are willing to enroll and participate in a proposed community based insurance scheme because they accept such a system.[21] Majority of the respondents (88.2%) were willing to pay the opening premium of N400.00 and the mean amount they were willing to pay was N538.00 ± 227(1.35 ± 0.57 USD), this is similar to the mean willingness to pay amount of N522.00 ± 266.30 (1.31 ± 0.67 USD) which was reported in the study conducted in Ilorin south [22] and contrary to the mean WTP amount of N392.00 (0.98 USD) of a study in Nsukka, rural Nigeria[23] and another study done in Eastern Nigeria where the mean WTP amount for self of N314.30 (0.78 USD) was reported in the urban areas studied and N182.80 (0.46 USD) was reported in the rural areas which was attributed to differences in geo-political area and cost of living in the locations while the average amount of WTP across all the communities studied

was N261.60 (0.65 USD).[24] A similar study in India where a contingent valuation survey was conducted to obtain estimates of WTP for health insurance reported the mean WTP for health insurance as the equivalent of 15 USD per household per month. [25] There was a statistically significant relationship between educational status and willingness to pay from the study p-value = 0.0103; this corroborates findings in a study done on willingness to pay for CBHI done in North central of Nigeria where educational attainment of respondents was statistically significant influence and it influenced the premium that respondents were willing to pay. The more educated the respondents were, the higher the amount respondents were willing to pay and this was statistically significant, the p-value was 0.0000 [12] whereas this contrasted with studies in Edo and India which reported no significant association with education and willingness to pay. [26,27]

Occupation was found to significantly correlate and also was associated with willingness to pay for CBHI. The respondents on salary employments and artisans were willing to pay more for a proposed health insurance scheme p-value = 0.02. Average monthly income and past health expenditure for house hold heads were found to have a statistically significant association with willingness to pay for CBHI, p-value = 0.0001 and p-value =0.000 respectively. Based on the logistic regression results seen, the key variables found to be significant factors or predictors of willingness to pay were average monthly income of respondents and past health expenditure of household heads. The income of the respondents and past health expenditure showed associated statistically significant relationship. There was a statistically significant association with average monthly income of N40,000-59,000 and N>60,000 and willingness to pay, [OR = 5.2, (2.31-11.78)] and [OR= 2.6(1.22-5.75)] respectively, (p<0.05). For those who earn N40, 000-59,000 and N60, 000, willingness to pay for CBHI was 5.2 and 2.6 times higher than respondents who earn less income. This suggests that household with higher income earnings are more willing to pay into the CBHI which is similar to studies done in Ilorin , North central of Nigeria , India, Malaysia and

Bangladesh where a higher income was associated with uptake and willingness to pay more for health insurance among the respondents.[28,29,3031] This finding is also corroborated by studies done in the Caribbean and Cameroon where respondents with a higher income were more likely to participates in the health insurance than respondents with a lower income.[32]

The past expenditure of house hold head had statistically significant relationship with willingness to pay in those who spent between N101-500, (p <0.05) but the odds ratio is 0.5, confidence interval= 0.27-0.90. The odds for respondents with past health expenditure between N101-500 willingness to pay for CBHI decreases by a factor of 0.5, which means they are willing to pay less amount for CBHI, this suggests that respondents who incur lower cost in treatment are not willing to pay into a CBHI which corroborates a study done in Edo where people who spent less on illness were not willing to pay into the health insurance. This suggests that people who spend more on health and illness are more willing to pay into a CBHI which may be indicative of susceptibility to adverse selection problem, as people with greater exposure or higher record of illnesses are more likely to enroll. [33]There is therefore the risk of enrolment on the scheme being dominated by the people with ill-health conditions. The finding from this study is closely related to the study done in Nsukka and Ilorin where past health expenditure was found to be statistically significant with willingness to pay. [28,34]

End note: The value of naira to dollar as at the time the study was done was N400= 1USD

CONCLUSION

There was poor awareness of CBHI among the respondents in the study although a great preponderance of the respondents were willing to enroll themselves and household members in a proposed scheme of CBHI. Majority of the respondents were willing to pay the opening premium of N400.00 while those unwilling to enroll in such schemes stated inability to pay the premium as their main reason. The stakeholders of such a proposed scheme will have to set the premium at an

amount within the range of amount they are WTP being N100 to N2000 and a mechanism to allow for differential payment based on educational level and income in the registration for CBHI. Community awareness campaigns should be done in the community about CBHI and community engagement and advocacy visits to stakeholders in the community to effectively mobilize resources and promote ownership of such scheme when it is founded.

Conflict of Interest

Authors have no conflict of interest.

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